

REMARKS

The Examiner's action mailed on December 17, 2004, has been received and its contents carefully considered.

Claims 1-8 were pending in this application. Claims 1-8 are amended, and new claims 9 and 10 are added herein. Claims 1 and 8 remain the independent claims in this application.

In the Action, the Examiner objects to the drawings because fixed nodes O and T, which are discussed in the specification (page 5, line 19) are not shown in Figure 1 of the drawings.

The Applicants have indicated that the reference to terminal "O," on page 5 of the specification, was an inadvertent error. Accordingly, the specification is amended herein to delete that reference. On the other hand, the Examiner's objection to the inclusion of terminal "T" is not understood, as this element is shown near the bottom of Figure 1, designated in both the Figure 1 and in the specification as item 16.

In view of the amendments to the specification, no changes to Figure 1 are necessary. However, a replacement for Figure 2 is submitted with this Amendment to correct minor spelling errors discovered by the Applicants in the legends in boxes 34 and 38. Approval and entry of the attached replacement drawing sheet is respectfully requested.

In the Action, claim 7 is rejected under 35 USC §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which the applicant regards as the invention. Specifically, the Examiner points to the term "operating bus" used in the claim (application page 34, line 13) as well as in the specification and the figures, as being indefinite. The Examiner asserts it is unclear whether the term "bus" refers to a "bus as an electrical connection" or as "a method of delivery."

The Applicants respectfully disagree. It is well established that the disclosure may be used where required to determine the scope of a recited term. See In re Barr, 444 F.2d 588, 170 USPQ 233 (CCPA 1971). Upon considering the specification, it is clear that the term "operating bus" refers to a vehicle for transporting passengers, rather than some form of electrical connection for carrying signals. For example, the specification, referring to Figure 1, states on page 5 that "a communication network system 10 of this embodiment

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AMENDMENTS TO THE DRAWINGS

Please replace original Figure 2 of the drawings with the replacement drawing sheet attached to this Amendment.

includes a mobile communication terminal (mobile node) W, X, Y and Z provided in a regularly operating bus 12a, 12b, 12c, and 12d respectively, and a fixed communication terminal (fixed node) L, M, N, O, P, Q, R, S and T provided in a stop point 14a, 14b, 14c, 14d, 14e, 14f, 14g and a terminal 16 respectively. The stop points 14a, 14b, 14c and 14d form a first route Rt1 in the form of a loop. The stop points 14d, 14e, 14f, 14g and the terminal 16 form a linear second route Rt2 (emphasis added)."

Figure 1 itself portrays items 12a, 12b, 12c, and 12d in simplified form as some sort of vehicles on wheels. This is consistent with an interpretation, based on the above quoted language, that the term "regularly operating bus" refers to a vehicle carrying a mobile communication terminal and traveling over a route defined by stop points at which fixed communication terminals are located.

Further support for interpreting the term "operating bus" as referring to a passenger vehicle may be found, for example, at page 10, line 20, of the application, which states that "if the student 24 rides the regularly operating bus 12a, and on condition that its own temporary ID "BL" and "DR" are temporarily registered (with a limited time), the packet signal is transferred from the mobile node W to the user node B (emphasis added)." It is difficult to imagine how a student would be able to ride on a bus intended to carry only electrical signals.

Although the Applicants believe that the term "operating bus" is not ambiguous in any way, claim 7 is amended herein, in the interest of moving the application forward, to replace the term "operating bus" with --operating passenger bus--. A similar amendment is made to the specification, in the paragraph beginning on page 5, line 16, solely for the purpose of clarification. No new matter is added by these amendments. Consideration of these amendments and withdrawal of the §112, second paragraph, rejection are respectfully requested.

Claims 1-8 stand rejected under 35 USC §103(a) as being obvious over Rignell (U.S. Patent No. 6,304,752). It is respectfully submitted that for at least the reasons discussed below, the amended claims patentably distinguish over the applied prior art reference.

Regarding independent claims 1 and 8, the Examiner asserts that Rignell teaches a communication network system to send a data signal by way of a plurality of wireless

communication terminals (see column 2, lines 27-30), wherein said plurality of wireless communication terminals includes at least one mobile communication terminal (reads on mobile telecommunications system PLMN, see column 3, lines 24-25, or primary station 100, see column 6, lines 1-14) moving on a predetermined route (according to the Examiner, this basically means that the mobile device e.g. hand-held mobile phone is moving in a certain path, see column 3, lines 35-42) and a fixed communication terminal (this reads on fixed station system PSTN, see column 3, lines 25-26, or secondary station 200, see also Figures 1 and 2).

The Examiner acknowledges that "Rignell does not exactly teach a plurality of fixed communication terminals moving on a predetermined route." However, the Examiner asserts that it would have been obvious to one of ordinary skill in the art at the time the invention was made to have more than one fixed communication terminal, arguing that an advantage in this scenario is to send the same amount of information to a larger number of users located at different fixed stations.

As recited in claim 1, the present invention is directed to a communications network system to send a data signal by way of a plurality of wireless communication terminals, wherein the plurality of wireless communication terminals includes at least one mobile communication terminal moving on a predetermined route and a plurality of fixed communication terminals fixed along the predetermined route. An important feature of the present invention is that each of the fixed communication terminals sends data signals to the other fixed communication terminals via the at least one mobile communication terminal. In other words, the at least one mobile communication terminal, which makes the rounds of the plurality of fixed communication terminals, functions as a relay station (see, for example, application Figure 1). As a result, it is not necessary to communicate between the fixed nodes by utilizing a strong radio signal, thus preventing unnecessary radio interference. Further, there is no need to install a cable to establish communications between the fixed communication terminals, thus made it possible to establish a communication network at low cost (see, for example application page 29, lines 13-22). To reflect this limitation, claim 1 is amended herein to add the words "data communication between the fixed communication terminals being made by way of the at least one mobile communication terminal." A similar limitation is added herein to independent claim 8.

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It is respectfully submitted that Rignell fails to teach or suggest the above-mentioned features of the present invention. The invention in Rignell addresses a wholly different problem, namely, how to control and monitor the transmission of multiple non real-time critical messages in situations when transmissions are prematurely interrupted (column 1, line 67 through column 2, line 3). Although Rignell generally describes a wireless communication system comprising a plurality of fixed communication terminals RBS1 - RBS4, and at least one mobile communication terminal MS1, MS2, it fails to disclose that the mobile communication terminal "moves on a predetermined route" and that the plurality of fixed communication terminals are "fixed along said predetermined route," as claim 1 requires. The text referenced by Examiner (column 3, lines 24-42) indicates that the mobile system in Rignell comprises a number mobile communication stations, which can be of any type, including hand-held mobile phones, but contrary to the Examiner's assertion, lacks any suggestion that the mobile devices move along a predetermined route. Nor is there any suggestion in Rignell that the fixed communication stations are arranged along such a fixed route.

Moreover, Rignell fails to teach or suggest the important limitation, "data communication between the fixed communication terminals being made by way of the at least one mobile communication terminal." As Figures 1 and 2 of Rignell clearly show, the mobile communication terminals MS1, MS2 communicate with the fixed terminals RBS1-RBS4, but do not serve as wireless communication relays between them. If the fixed communication terminals in Rignell were to communicate with each other at all (a function which is not disclosed), it would be by way of the cables that are shown to interconnect them.

In light of the foregoing, it is respectfully submitted that claim 1, and similarly claim 8, patentably distinguish over Rignell.

Claims 2-7 are amended to more clearly recite the claimed invention. It is submitted that claims 2-7 are allowable for at least the reason that they depend from claim 1.

New claims 9 and 10 are added to recite additional features disclosed in the application, but not previously claimed. Specifically, claim 9 is directed to a system that includes user communication terminals that are proximate to respective ones of a plurality of fixed communication terminals that are fixed at points along the predetermined route, as

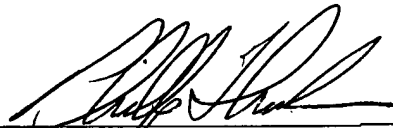
shown for example in Figure 1 of the application, where data communication between the user communications terminals is made by way of the fixed communications terminals. Claim 10 recites the limitation that the mobile communications terminal is adapted to communicate with each of the fixed communication terminals when it is at a respective point along the predetermined route at which such fixed communication terminal is located, a limitation that reflects the relatively low power used for data communication in the present invention, as previously discussed.

All of the Examiner's objections and claim rejections having been addressed, it is respectfully submitted that the application, as amended, is in condition for allowance. Notice of such allowance, with claims 1-10, is earnestly solicited.

Should the Examiner believe that an interview would help to expedite prosecution of this application, the Examiner is encouraged to call the undersigned attorney to arrange such an interview.

Respectfully submitted,

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Date


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Attachment:
Replacement Drawing Sheet (Fig. 2)